It seems unlikely that so keen an observer as Michaux should have overlooked both the well-marked second glume and the prominent prolongation of the rachilla, lying behind the palea. Michaux's description of the panicle "laxa debile" does not well apply to the narrow erect panicle of *Brachyelytrum*. Altogether the identity of *Dilepyrum aristosum* is uncertain.

If one works on a type basis, the second species (*D. minutiflorum*) should be chosen as the type species of *Dilepyrum* because the first one does not accord with the generic description. *Dilepyrum* then becomes a synonym of *Muhlenbergia*. If one attaches the name *Dilepyrum* to the first species (*D. aristosum*) because the second species had been described under *Muhlenbergia*, the genus is uncertain because the species on which it is based has not been identified, and *Dilepyrum* should therefore not replace *Brachyelytrum*, a well-known genus.

U. S. DEPARTMENT OF AGRICULTURE.

NOTES ON SOME FRESHWATER ALGAE FROM NEWFOUNDLAND.

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WHILE on an expedition to Newfoundland in 1926, with Messrs. M. L. Fernald and Bayard Long, the primary object of which was the collecting of flowering plants, the junior author embraced the opportunities thus afforded to make incidental collections of freshwater algae at several widely differing localities. A list of the species procured, as prepared by the senior author, contains records which, because of their novelty or of interesting extensions of range, seem to warrant its preservation in published form.

Collections were made about the Bay of Islands (along the west coast of Newfoundland, 130 miles north of Port-aux-Basques), and in the vicinity of Burgeo (on the south coast, about 70 miles east of Port-aux-Basques). All the collecting was done between September 2 and September 14, 1926.

The freshwater flora of the territory visited promises much of interest in relation to that of the high mountains of eastern British

Columbia[1] and of the arctic-alpine districts of Norway, Sweden and elsewhere.[2]

In general, marked similarities appear in the dominance of *Stigonema ocellatum* or *Scytonema myochrous* as a coating on irrorated rocks, over which hang or float mats of sterile *Zygnema*, *Spirogyra*, *Mougeotia* or the Heterokont *Tribonema*. These first three genera very rarely fruit in such situations and so can not be given specific names, but are at best roughly classed by the diameters of their filaments. A greater variety occurs in the basal crust in other localities, where *Stigonema panniforme* (Ag.) Kirch., *Tolypothrix penicillata* (Ag.) Thuret, *Calothrix parietina* and other forms may participate, but this is probably explained by the small number of Newfoundland collections available, as limiting the opportunities for a comprehensive survey. No great abundance of *Nostoc* appears in them, which is also surprising, but this genus seems to play a more important part in the British Columbia than in the Scandinavian flora mentioned. The flora of Coccogonales and of Protococcales appears rather poorer than in British Columbia, and the species differ somewhat, but the facies is the same.

Since the freshwater algal flora of Newfoundland is practically untouched most of the data given here represent new records. It is, unfortunately, not practicable to list the diatoms nor (for the most part) the desmids.

French (or Tweed) Island. This is one of the outer group of islands in the Bay of Islands. It was visited on September 2. Rugged, dripping trap cliffs arise precipitously from a narrow, shelving sandy beach. On the wet faces of these cliffs such flowering plants as *Sagina nodosa*, *Saxifraga aizoides* and *S. oppositifolia*, *Plantago juncoides*, var. *decipiens* and a coarse variety of *Artemisa borealis* grew in crevices. The rocks in many places were covered with a slimy green coating, which proved to be due to the presence of *Spirogyra varians* (Hassall) Kützing, here collected with zygospores.

Woody Island, which was visited on September 3, is one of the inner islands (situated almost in the mouth of Humber Arm), and is, therefore, lower and less rugged than the preceding. The main

[1] W. R. Taylor, Rhodora, 1922, 1924, and in preparation.

[2] K. M. Ström. The Alga-flora of the Sarek Mountains. Naturw. Unters. Sarekgebirges u. s. w. 3 (Botanik)[5]: 437–521. 1923; and K. M. Ström. Norwegian Mountain Algae. Skr. Norske. Vid.–Akad. Oslo I (Mat.–Nat. Klasse) 1926[6]: 1–263. 1926.

part of the island (known as Wood's Island) has been burned over and grazed, and, in consequence, presents a discouragingly barren appearance. To the west, however, and separated by a narrow passage, occurs a small island (Woody Island) which has apparently retained its original vegetation. A collection made of *Cephalozia*, etc., from the rills that trickle down the gentle southeastern sandstone slope of this islet was found to contain frequent desmids and diatoms, dominated by *Ulothrix variabilis* Kützing and *Microspora quadrata* Hazen, which were both abundant.

North Arm. The northernmost of the three finger-like inland extensions of the Bay of Islands is North Arm, which was visited on September 4. To the north and west this arm is flanked by a high serpentine ridge. The sharp rocks making up this ridge give the appearance of having been tumbled from a vast hopper and allowed to fall carelessly into place. The aspect thus presented from even a short distance is one of barren desolation, but upon closer approach it may be seen that the slopes of this huge stone-pile are dissected by numerous rivulets, each supporting its own narrow belt of vegetation. *Rhododendron lapponicum* and *Statice labradorica* were frequent in the rock crevices here, while, characterizing the moister belts bordering the diminutive ravines were *Betula pumila* and *Salix candida*, with *Adiantum pedatum*, var. *aleuticum* occurring in chinks right at the water's edge. The wet serpentine rocks were covered with a growth of a sterile *Zygnema* (17 μ), mixed with which were *Scytonema myochrous* (Dillw.) Ag. and *Calothrix parietina* (Naeg.) Thuret, in order of abundance, and some indeterminate *Nostoc*.

Great Barachois. This locality, from which collections were made September 11, is situated on the southern coast of Newfoundland about five miles west of Burgeo. The shoreline throughout this region is formed by gnessic rocks, which slope gradually and in undulating curves to the water's edge, presenting gleaming white bare ledges and peaty depressions, the latter characterized by the occurrence of *Schizaea pusilla*, *Andromeda glaucophylla* and other indicators of acidity.

On the dripping ledges here were collected *Stigonema ocellatum* (Dillw.) Thuret, *Tribonema bombycina* D. & S., and a sterile species of *Zygnema* (15 μ) as the major items, and a long-celled species of *Mougeotia* (11 μ diam., 140 μ–155 μ long).

In the small pools in the hollows on the peaty slopes *Sparganium*

angustifolium, *Eriocaulon septangulare* and *Utricularia cornuta* occurred characteristically, while the interesting moss of Atlantic America and France, *Sphagnum Pylaesii*, formed in many of them a submerged trailing carpet. *Tribonema bombycina* constituted the major algal item of these pools, and with it were associated frequent specimens of *Dinobryon*, *Stigonema ocellatum*, occasional *Merismopedia glauca* (Ehrb.) Naeg., *Spirogyra sp.* and, as more rare, *Micrasterias truncata* (Corda) DeBreb, *Chroococcus turgidus* (Kütz.) Naeg. and *C. minutus* (Kütz.) Naeg.

Grandy Brook. Visited September 11. Grandy Brook flows south through gneissic hills to enter Little Barachois. Two types of collecting are offered by its peaty and rocky slopes: first, rapidly flowing streams, joining the main course at frequent intervals; second, small pools of standing water in the peaty hollows.

Streams. The wet rocks here were characterized chiefly by a coating of *Stigonema ocellatum* with more loosely attached tufts of *Mougeotia* (18 μ) abundant.

Pools. Here *Utricularia geminiscapa* grew profusely and was covered with a thick algal growth which has yielded the following forms: A sterile *Mougeotia* (48 μ–54 μ diam.) was the major single element, but desmids as a group were exceedingly abundant in individuals and species. *Hapalosiphon luteolus* W. & G. S. West and *Merismopedia glauca* were frequent. The most striking desmids were the two interesting forms *Micrasterias arcuata* Bailey and *M. expansa* Bailey, which range south to Florida and here appear far beyond their most northern record (Massachusetts).[1] They show a single short spine at the tip of each arm, these not appearing in Wolle's figures or descriptions, and the arms of *M. arcuata* are simply curved rather than faintly sigmoid. Prominently associated with these were *M. truncata* and *Hyalotheca dissiliens* (Smith) DeBreb. Other associated organisms included *Rhabdoderma lineare* Schmidle & Lauterborn (notable), *Scytonema myochrous*, *Aphanothece clathrata* W. & G. S. West, *Oedogonium* (7 μ), *Spirogyra* (18 μ), *Tribonema bombycina*, and, as rare constituents, *Stigonema ocellatum*, *Chroococcus minutus*, *C. turgidus*, and *Bulbochaete* (cells 15 μ x 18 μ, bristles abundant). Diatoms were abundant, Heliozoa and *Ceratium* and *Dinobryon* occasional.

[1] The occurrence on the South coast of southern species, on the West coast of Cordilleran and Arctic Scandinavian types, is interesting in connection with parallel relationships of the vascular plants already emphasized by Fernald.

BURGEO. Several large ponds nestle in the sterile gneissic hills around Burgeo. *Potamogeton epihydrus* and *Nymphozanthus variegatus* grew as floating forms in such ponds, while frequent on the shallow muddy bottoms, near the margins, were *Callitriche anceps* and *Elatine minima.* The two latter forms often supported an algal population of which the following representation is typical: *Tribonema bombycina* and the variety *tenuis* Hazen were the major items. *Oscillatoria irrigua* Kützing and *Scenedesmus denticulatus* Lagerheim were of frequent occurrence, and associated with them were *Coelastrum microporum* Naeg. and *Oedogonium sp.* (9 μ). The following were of rare occurrence: *Ankistrodesmus falcatus* (Corda) Ralfs, *Pediastrum Tetras* (Ehrb.) Ralfs, *P. Boryanum* (Turp.) Menegh., var. *longicorne* Racib., *Characium falcatum* Schroeder and *Chroococcus minutus.*

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